

SONY®

HD DIGITAL VIDEOCASSETTE RECORDER

HDW-2000

HDW-M2000

HDW-M2000P

HDW-S2000

HDW-S2000P

HD DIGITAL VIDEOCASSETTE PLAYER

HDW-M2100

HDW-M2100P

The supplied CD-ROM includes Operation Manuals for the HDW series of videocassette recorders and players (English and Japanese versions) in PDF format. For more details, see page 6, "Using the CD-ROM Manual."

HDCAM



Tele-File



OPERATION GUIDE English

1st Edition (Revised 8)



3206516090

Before operating the unit, please read this manual thoroughly and retain it for future reference.

WARNING

To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.

To avoid electrical shock, do not open the cabinet. Refer servicing to qualified personnel only.

THIS APPARATUS MUST BE EARTHED.



This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

For the customers in the U.S.A.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

You are cautioned that any changes or modifications not expressly approved in this manual could void your authority to operate this equipment.

All interface cables used to connect peripherals must be shielded in order to comply with the limits for a digital device pursuant to Subpart B of Part 15 of FCC Rules.

WARNING: THIS WARNING IS APPLICABLE FOR USA ONLY.

If used in USA, use the UL LISTED power cord specified below.

DO NOT USE ANY OTHER POWER CORD.

Plug Cap Parallel blade with ground pin (NEMA 5-15P Configuration)

Cord Type SJT, three 16 or 18 AWG wires

Length Minimum 1.5 m, Less than 2.5 m (8 ft 3 in)

Rating Minimum 10 A, 125 V

Using this unit at a voltage other than 120V may require the use of a different line cord or attachment plug, or both.

To reduce the risk of fire or electrical shock, refer servicing to qualified service personnel.

WARNING: THIS WARNING IS APPLICABLE FOR OTHER COUNTRIES.

1. Use the approved Power Cord (3-core mains lead)/Appliance Connector/Plug with earthing-contacts that conforms to the safety regulations of each country if applicable.
2. Use the Power Cord (3-core mains lead)/Appliance Connector/Plug conforming to the proper ratings (Voltage, Ampere).

If you have questions on the use of the above Power Cord/ Appliance Connector/Plug, please consult a qualified service personnel.

For the customers in Europe, Australia and New Zealand (for HDW-2000/M2000/M2000P/M2100/M2100P)

WARNING

This is a Class A product. In a domestic environment, this product may cause radio interference in which case the user may be required to take adequate measures.

For the customers in Europe (for HDW-2000/M2000/M2000P/M2100/M2100P)

This product with the CE marking complies with the EMC Directive issued by the Commission of the European Community.

Compliance with this directive implies conformity to the following European standards:

- EN55103-1: Electromagnetic Interference(Emission)
- EN55103-2: Electromagnetic Susceptibility(Immunity)

This product is intended for use in the following Electromagnetic Environment: E4 (controlled EMC environment, ex. TV studio).

The manufacturer of this product is Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan.

The Authorized Representative for EMC and product safety is Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Germany.

This apparatus shall not be used in the residential area.

CAUTION

The apparatus shall not be exposed to dripping or splashing. No objects filled with liquids, such as vases, shall be placed on the apparatus.

CAUTION

The unit is not disconnected from the AC power source (mains) as long as it is connected to the wall outlet, even if the unit itself has been turned off.

WARNING

Excessive sound pressure from earphones and headphones can cause hearing loss. In order to use this product safely, avoid prolonged listening at excessive sound pressure levels.

AVERTISSEMENT

Afin de réduire les risques d'incendie ou d'électrocution, ne pas exposer cet appareil à la pluie ou à l'humidité.

Afin d'écartier tout risque d'électrocution, garder le coffret fermé. Ne confier l'entretien de l'appareil qu'à un personnel qualifié.

CET APPAREIL DOIT ÊTRE RELIÉ À LA TERRE.

AVERTISSEMENT: CET AVERTISSEMENT EST VALABLE POUR LES AUTRES PAYS.

1. Utiliser un cordon d'alimentation approuvé (conducteur d'alimentation 3 âmes)/connecteur d'appareil/prise avec contacts de mise à la terre conforme aux règles de sécurité de chaque pays si applicable.
2. Utiliser un cordon d'alimentation approuvé (conducteur d'alimentation 3 âmes)/connecteur d'appareil/prise conforme aux valeurs nominales (tension, ampérage) correctes.

S'adresser à un personnel de service qualifié pour toute question concernant l'emploi du cordon d'alimentation/connecteur d'appareil/prise ci-dessus.

Pour les clients en Europe, Australie et Nouvelle-Zélande (pour HDW-2000/M2000/M2000P/M2100/M2100P)

AVERTISSEMENT

Il s'agit d'un produit de Classe A. Dans un environnement domestique, cet appareil peut provoquer des interférences radio, dans ce cas l'utilisateur peut être amené à prendre des mesures appropriées.

Pour les clients en Europe (pour HDW-2000/M2000/M2000P/M2100/M2100P)

Ce produit portant la marque CE est conforme à la Directive sur la compatibilité électromagnétique (EMC) émise par la Commission de la Communauté européenne.

La conformité à cette directive implique la conformité aux normes européennes suivantes:

- EN55103-1: Interférences électromagnétiques (émission)
- EN55103-2: Sensibilité électromagnétique (immunité)

Ce produit est prévu pour être utilisé dans l'environnement électromagnétique suivant: E4 (environnement EMC contrôlé, ex. studio de télévision).

Le fabricant de ce produit est Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japon.

Le représentant autorisé pour EMC et la sécurité des produits est Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Allemagne.

Ne pas utiliser cet appareil dans une zone résidentielle.

ATTENTION

Eviter d'exposer l'appareil à un égouttement ou à des éclaboussures. Ne placer aucun objet rempli de liquide, comme un vase, sur l'appareil.

ATTENTION

Cet appareil n'est pas déconnecté de la source d'alimentation secteur tant qu'il est raccordé à la prise murale, même si l'appareil lui-même a été mis hors tension.

AVERTISSEMENT

Une pression acoustique excessive en provenance des écouteurs ou du casque peut provoquer une baisse de l'acuité auditive. Pour utiliser ce produit en toute sécurité, évitez l'écoute prolongée à des pressions sonores excessives.

WARNING

Um die Gefahr von Bränden oder elektrischen Schlägen zu verringern, darf dieses Gerät nicht Regen oder Feuchtigkeit ausgesetzt werden.

Um einen elektrischen Schlag zu vermeiden, darf das Gehäuse nicht geöffnet werden. Überlassen Sie Wartungsarbeiten stets nur qualifiziertem Fachpersonal.

DIESES GERÄT MUSS GEERDET WERDEN.

WARNUNG: DIESE WARNUNG GILT FÜR ANDERE LÄNDER.

1. Verwenden Sie Netzkabel (dreiadrig), Geräteanschlüsse und Netzkabelstecker mit Masseleitung, die den Sicherheitsrichtlinien des jeweiligen Landes entspricht.
2. Verwenden Sie Netzkabel (dreiadrig), Geräteanschlüsse und Netzkabelstecker mit Masseleitung, die den vor Ort herrschenden Spannungsanforderungen (Spannung, Stromstärke) entsprechen.

Bei Frage über die Eignung und Sicherheit von Netzkabeln (dreiadrig), Geräteanschlüssen und Netzkabelsteckern wenden Sie sich bitte an einen qualifizierten Electrotechniker.

Für Kunden in Europa, Australien und Neuseeland (für HDW-2000/M2000/M2000P/M2100/M2100P)

WARNUNG

Dies ist eine Einrichtung, welche die Funk-Entstörung nach Klasse A besitzt. Diese Einrichtung kann im Wohnbereich Funkstörungen verursachen; in diesem Fall kann vom Betreiber verlangt werden, angemessene Maßnahmen durchzuführen und dafür aufzukommen.

Für Kunden in Europa (für HDW-2000/M2000/M2000P/M2100/M2100P)

Dieses Produkt besitzt die CE-Kennzeichnung und erfüllt die EMV-Richtlinie der EG-Kommission.

Angewandte Normen:

- EN55103-1: Elektromagnetische Verträglichkeit (Störaussendung)
- EN55103-2: Elektromagnetische Verträglichkeit (Störfestigkeit)

Für die folgende elektromagnetische Umgebung: E4 (kontrollierter EMV-Bereich, z.B. Fernsehstudio).

Der Hersteller dieses Produkts ist Sony Corporation, 1-7-1 Konan, Minato-ku, Tokyo, 108-0075 Japan.

Der autorisierte Repräsentant für EMV und Produktsicherheit ist Sony Deutschland GmbH, Hedelfinger Strasse 61, 70327 Stuttgart, Deutschland.

Dieser Apparat darf nicht im Wohnbereich verwendet werden.

ACHTUNG

Das Gerät ist nicht tropf- und spritzwassergeschützt. Es dürfen keine mit Flüssigkeiten gefüllten Gegenstände, z. B. Vasen, darauf abgestellt werden.

ACHTUNG

Solange das Netzkabel an eine Netzsteckdose angeschlossen ist, bleibt das Gerät auch im ausgeschalteten Zustand mit dem Stromnetz verbunden.

WARNUNG

Zu hoher Schalldruck von Ohrhörern und Kopfhörern kann Gehörschäden verursachen. Um dieses Produkt sicher zu verwenden, vermeiden Sie längeres Hören bei sehr hohen Schalldruckpegeln.

For the customers in Taiwan only



廢電池請回收

For kundene i Norge

Dette utstyret kan kobles til et IT-strømfordelingssystem.

Table of Contents

Using the CD-ROM Manual	6
CD-ROM System Requirements	6
Preparations	6
To Read the CD-ROM Manual	6
Specifications	7

Using the CD-ROM Manual

The supplied CD-ROM includes Operation Manuals for the HDW series of videocassette recorders and players (English and Japanese versions).

CD-ROM System Requirements

The following are required to access the supplied CD-ROM disc.

- Computer: PC with Intel Pentium CPU.
 - Installed memory: 64 MB or more
 - CD-ROM drive: × 8 or faster
- Monitor: Monitor supporting resolution of 800 × 600 or higher
- Operating system: Microsoft Windows XP Professional or Windows XP Home Edition

When these requirements are not met, access to the CD-ROM disc may be slow, or not possible at all.

Preparations

The following software must be installed on your computer in order to use the operation manuals contained in the CD-ROM disc.

- Adobe Acrobat Reader Version 4.0 or higher
- Adobe Reader Version 6.0 or higher

Notes

If Adobe Reader is not installed, it may be downloaded from the following URL:
<http://www.adobe.com/products/acrobat/readstep2.html>

To Read the CD-ROM Manual

To read the operation manual contained in the CD-ROM disc, do the following.

- 1 Insert the CD-ROM disc in your CD-ROM drive.

A cover page appears automatically in your browser.

If it does not appear automatically in the browser, double click the index.htm file on the CD-ROM disc.

- 2 Select and click the operation manual that you want to read.

A PDF file of the operation manual opens.

Note

If you lose the CD-ROM disc or become unable to read its content, for example because of a hardware failure, you can do one of the following.

- You can purchase a new CD-ROM disc to replace one that has been lost or damaged. Contact a Sony service representative.
- You can purchase printed versions of the operation manuals. Contact a Sony service representative. When ordering, be sure to specify the part number of the manual you want.

Part No.	Models covered
3-205-317-0X	HDW-2000/M2000/M2000P
3-206-137-0X	HDW-M2100/M2100P
3-854-863-0X	HDW-S2000/S2000P

Specifications

General

Recording format (HDW-2000/M2000/M2000P/S2000/S2000P)	HDCAM
Power requirements	100 to 240 VAC, 50/60 Hz
Power consumption	2.2 A (220 W), when used without optional devices
Peak inrush current	
(1) Power ON, current probe method:	
HDW-2000	40 A (240 V), 20 A (100 V)
HDW-M2000/M2000P/S2000/S2000P/M2100/M2100P	50 A (240 V), 14 A (100 V)
(2) Hot switching inrush current, measured in accordance with European standard EN55103-1:	
HDW-2000	20 A (230 V)
HDW-M2000/M2000P/S2000/S2000P/M2100/M2100P	25 A (230 V)
Appel de courant de crête	
(1) Mise sous tension (ON), méthode de sondage du courant:	
HDW-2000	40 A (240 V), 20 A (100 V)
HDW-M2000/M2000P/S2000/S2000P/M2100/M2100P	50 A (240 V), 14 A (100 V)
(2) Mesuré conformément à la norme européenne EN55103-1:	
HDW-2000	20 A (230 V)
HDW-M2000/M2000P/S2000/S2000P/M2100/M2100P	25 A (230 V)
Spitzenstrom	
(1) Einschaltstrom, Stromsonde:	
HDW-2000	40 A (240 V), 20 A (100 V)
HDW-M2000/M2000P/S2000/S2000P/M2100/M2100P	50 A (240 V), 14 A (100 V)
(2) Gemessen in EN55103-1:	
HDW-2000	20 A (230 V)
HDW-M2000/M2000P/S2000/S2000P/M2100/M2100P	25 A (230 V)
Operating temperature	5°C to 40°C (41°F to 104°F)
Storage temperature	-20°C to +60°C (-4°F to +140°F)
Humidity	20 to 90%
Mass	23 kg (50 lb 11 oz)
Dimensions (w/h/d)	427 × 194 × 544 mm (16 7/8 × 7 3/4 × 21 1/2 inches)

Tape transport system

Tape speed	HDCAM: 96.7 mm/s (59.94i, 29.97PsF) 80.6 mm/s (50i, 25PsF), 77.4 mm/s (24PsF, 23.98PsF) Digital Betacam: 96.7 mm/s MPEG IMX: 64.5 mm/s (525/59.94) 53.8 mm/s (625/50) Betacam SX: 59.6 mm/s Analog Betacam: 118.6 mm/s (525/59.94) 101.5 mm/s (625/50)
HDCAM record/playback time	124 minutes with BCT-124HDL (59.94i, 29.97PsF) 149 minutes with BCT-124HDL (50i, 25PsF) 155 minutes with BCT-124HDL (24PsF, 23.98PsF)
Digital Betacam playback time	124 minutes with BCT-D124L
MPEG IMX playback time (HDW-M2000/M2000P/M2100/M2100P)	184 minutes with BCT-184MXL (525/59.94) 220 minutes with BCT-184MXL (625/50)
Betacam SX playback time (HDW-M2000/M2000P/S2000/S2000P/M2100/M2100P)	194 minutes with BCT-194SXL
Analog Betacam playback time (HDW-M2000/M2000P/S2000/S2000P/M2100/M2100P)	90 minutes with BCT-90MLA (525/59.94) 108 minutes with BCT-90MLA (625/50)
Fast forward/rewind time	Approx. 3 minutes with BCT-124HDL
Search speed	
Shuttle mode	HDCAM playback: Still to approx. ±50 times normal playback speed (59.94i, 29.97PsF) Still to approx. ±58 times normal playback speed (50i, 25PsF) Still to approx. ±60 times normal playback speed (24PsF, 23.98PsF)

Specifications

	Digital Betacam playback: Still to approx. ± 50 times normal playback speed
	MPEG IMX/Betacam SX playback: Still to approx. ± 78 times normal playback speed
	Analog Betacam playback: Still to ± 35 times normal playback speed (525/59.94)
	Still to ± 42 times normal playback speed (625/50)
Variable speed mode	HDCAM playback: -1 to $+2$ times normal playback speed
	Digital Betacam playback: -1 to $+3$ times normal playback speed
	MPEG IMX playback: -1 to $+3$ times normal playback speed
	Betacam SX playback: -1 to $+2$ times normal playback speed
	Analog Betacam playback: -1 to $+3$ times normal playback speed
Jog mode	HDW-2000/M2000/M2000P/S2000/S2000P: Still to ± 1 times normal playback speed
	HDW-M2100/M2100P: Still to ± 2 times normal playback speed
Servo lock time	0.6 (59.94i, 29.97PsF)/0.7 (50i, 25PsF, 24PsF, 23.98PsF) second or less (from standby on)
Load/unload time	6 seconds or less
Recommended tapes	HDCAM cassettes (S, L) BCT-6HD/12HD/22HD/32HD/40HD BCT-34HDL/64HDL/94HDL/124HDL MPEG IMX cassettes (S, L) (for playback only) Digital Betacam cassettes (S, L) (for playback only) Betacam SX cassettes (S, L) (for playback only) Betacam SP cassettes (S, L) (for playback only) Betacam cassettes (S, L) (for playback only)

Digital video system

Digital video signal system

Sampling frequency	Y: 74.25 MHz
	R-Y/B-Y: 37.125 MHz

Quantization	8 bits/sample
Compression	Coefficient recording system
Channel coding	S-I-NRZI PR-IV
Error correction	Reed-Solomon code

Analog component output

Bandwidth	Y: 0 to 5.75 MHz $+0.5$ dB/ -2.0 dB R-Y/ B-Y: 0 to 2.75 MHz $+0.5$ dB/ -2.0 dB
S/N ratio	56 dB or more
K factor (2T pulse)	1% or less

Analog composite output (HDW-M2100/M2100P)

Bandwidth (Y)	0 to 5.75 MHz $+0.5$ dB/ -2.0 dB
S/N ratio	53 dB or more
Differential gain	2% or less
Differential phase	2° or less
Y/C delay	20 ns or less
K factor (2T pulse)	1% or less
Output SCH phase	Based upon RS-170A/CCIR R.624-3 (Adjustable by using the menu)

Digital audio system

Digital audio (CH1 to CH4) signal format

Sampling frequency	48 kHz (synchronized with video)
Quantization	20 bits/sample
Wow and flutter	Below measurable level
Headroom	20 dB (or 18 dB, selectable)
Emphasis	T1= 50 μ s, T2=15 μ s (on/off selectable in recording mode)

Analog input/output (CH1 to CH4)

A/D, D/A quantization	20 bits/sample
Frequency response	20 Hz to 20 kHz $+0.5$ dB/ -1.0 dB (0 dB at 1 kHz)
Dynamic range	95 dB or more (at 1 kHz, emphasis on)
Distortion	0.05% or less (at 1 kHz, emphasis on, reference level (+4 dBm))
Crosstalk	-80 dB or less (at 1 kHz, between any two channels)

Analog audio (CUE)

Frequency response

100 Hz to 12 kHz ± 3 dB

S/N ratio 45 dB or more (at 3% distortion level)

Distortion 2% or less (THD, 1 kHz reference level)

Wow and flutter 0.2% rms or less

Digital Betacam playback

Video

Bandwidth	Y	0 to 5.75 MHz +0.5 dB/−0.5 dB
	R−Y/B−Y	0 to 2.75 MHz +0.5 dB/−0.5 dB
S/N ratio		62 dB or more
K factor		1% or less

Digital Audio (CH1 to CH4)

Frequency response	20 Hz to 20 kHz +0.5 dB/−1.0 dB
Dynamic range	95 dB (at 1 kHz, emphasis on)
Distortion	0.05% rms or less (at 1 kHz, emphasis on)
Wow and flutter	Below measurable level

Analog Audio (cue track)

Frequency response	100 Hz to 12 kHz +3 dB/−3 dB
S/N ratio	45 dB or more (at 3% distortion level)
Distortion	2% or less (THD, 1 kHz, reference level)
Wow and flutter	0.2% rms or less

MPEG IMX playback

Video

Bandwidth	Y	0 to 5.75 MHz +0.5 dB/−3.0 dB
	R−Y/B−Y	0 to 2.75 MHz +0.5 dB/−2.0 dB
S/N ratio		56 dB or more
K factor (2T pulse)		1% or less

Digital audio (CH1 to CH8)

Frequency response	20 Hz to 20 kHz +0.5 dB/−1.0 dB(0 dB at 1 kHz)
Dynamic range	90 dB or more (1 kHz, emphasis on, 16 bits/48 kHz)
Distortion	0.05% or less (1 kHz, emphasis on, reference level (+ 4 dBm))

Specifications

Betacam SX playback

Video

Bandwidth	Y	0 to 4.5 MHz +0.5 dB/−3.0 dB
	R−Y/B−Y	0 to 2.0 MHz +0.5 dB/−3.0 dB
S/N ratio		56 dB or more
K factor (2T pulse)		1% or less

Digital Audio (CH1 to CH4)

Frequency response	20 Hz to 20 kHz +0.5 dB/−1.0 dB (0 dB at 1 kHz)
Dynamic range	90 dB or more (at 1kHz, emphasis on)
Distortion	0.05% or less (at 1 kHz, emphasis on, reference level (+4 dBm))

Analog Betacam playback

Video

		Metal tape	Oxide tape
Bandwidth	Y	30 Hz to 4.5 MHz +0.5 dB/ −4.0 dB	30 Hz to 4.1 MHz +0.5 dB/ −6.0 dB
	R−Y/ B−Y	30 Hz to 1.5 MHz +0.5 dB/−3.0dB	30 Hz to 1.5 MHz +0.5 dB/−3.0 dB
S/N ratio	Y	51 dB or more	48 dB or more
	R−Y/ B−Y	48 dB or more	45 dB or more
K factor (2T pulse)		2% or less	3% or less
LF non-linearity	Y		3% or less
	R−Y/ B−Y		4% or less
Y/C delay			20 ns or less

Audio

		Metal tape	Oxide tape
LNG	Frequency response (at 10 dB below reference level ^{a)})	50 Hz to 15 kHz +1.5 dB/ −3.0 dB	50 Hz to 15 kHz ±3.0 dB
	S/N ratio (at 3% distortion level)	72 dB or more	50 dB or more (Dolby NR off)
	Distortion (THD at 1 kHz reference level ^{a)})	1% or less	2% or less
	Wow and flutter	0.1% rms or less	0.1% rms or less
AFM	Frequency response (at reference level ^{a)})	20 Hz to 20 kHz +0.5 dB/−2.0 dB	—
	S/N ratio (at 3% distortion level)	85 dB or more	—
	Distortion (THD at 1 kHz reference level ^{a)})	0.5% or less	—

a) Reference level: +4 dBm

Processor adjustment range

Video level	± 3 dB/ $-\infty$ to +3 dB selectable
Chroma level	± 3 dB/ $-\infty$ to +3 dB selectable
Setup level (59.94 Hz mode)	± 30 IRE
Black level (50 Hz mode) (HDW-2000/M2000/ M2000P/S2000/S2000P)	± 210 mV
Y/C delay (HDW-S2000/S2000P/M2100/M2100P)	± 100 ns (for analog Betacam tapes)
Chroma phase	$\pm 30^\circ$
System phase	Sync: ± 15 μ s SC: ± 200 ns

Input connectors

HDSDI INPUT (HDW-2000/M2000/M2000P/S2000/ S2000P)	BNC (1 each for input and for through output to a monitor) Serial digital (1.485 Gbits/s) SMPTE 292M
SDTI INPUT (HDW-2000/M2000/M2000P/S2000/ S2000P)	BNC (1) (optional) SMPTE 305M (SDTI)
REF. VIDEO INPUT	BNC (2 in loop through connection) Black burst or composite sync 0.3 Vp-p, 75 Ω , sync negative
AUDIO INPUT CH1/2/3/4 (HDW-2000/M2000/ M2000P/S2000/S2000P)	XLR 3-pin, female (4) LOW OFF: -60 dBu, high impedance, balanced HIGH OFF: $+4$ dBu, high impedance, balanced HIGH ON: $+4$ dBm, 600 Ω termination, balanced
CUE IN (HDW-2000/M2000/M2000P/S2000/S2000P)	XLR 3-pin, female (1) LOW OFF: -60 dBu, high impedance, balanced HIGH OFF: $+4$ dBu, high impedance, balanced HIGH ON: $+4$ dBm, 600 Ω termination, balanced
AUDIO INPUT(AES/EBU) CH1/2, 3/4 (HDW-2000/ M2000/M2000P/S2000/S2000P)	BNC (2) Complies with AES-3id-1995

TIME CODE IN (HDW-2000/M2000/M2000P/S2000/ S2000P)	XLR 3-pin, female (1) 0.5 to 18 Vp-p, 10 k Ω , balanced
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Output connectors

HDSDI OUTPUT	BNC (3 including 1 for character superimposition) Serial digital (1.485 Gbits/s) SMPTE 292M
SDTI OUTPUT	BNC (2) (optional) SMPTE 305M (SDTI)
COMPONENT VIDEO OUTPUT	BNC (3 for 1 set) Y: 1.0 Vp-p, Sync negative R-Y/B-Y: 0.7 Vp-p, 75 Ω , with 100% or 75% color bar selectable
COMPOSITE VIDEO OUTPUT	BNC (3 including 1 for character superimposition) 1.0 Vp-p, 75 Ω , Sync negative
SDI OUTPUT	BNC (3 including 1 for character superimposition) Serial digital (270 Mbits/s) SMPTE 259 M
AUDIO OUTPUT CH1/2/3/4	XLR 3-pin, male (4) $+4$ dBm at 600 Ω load, low impedance, balanced
AUDIO OUTPUT (AES/EBU) CH1/2, 3/4, 5/6, 7/8	BNC (4) Complies with AES-3id-1995 (CH1/2 and CH3/4 only for HDW- 2000/S2000/S2000P)
CUE OUT	XLR 3-pin, male (1) $+4$ dBm at 600 Ω load, low impedance, balanced
MONITOR OUTPUT (L/R)	XLR 3-pin, male (2) $+4$ dBm at 600 Ω load, low impedance, balanced
TIME CODE OUT	XLR 3-pin, male (1) 2.2 Vp-p, low impedance, balanced
PHONES	JM-60 stereo phone jack $-\infty$ to -12 dBu at 8 Ω load, unbalanced

Specifications

Remote connectors

CONTROL PANEL

10-pin (2), female
Front/rear selectable

REMOTE 1-IN(9P)

D-sub 9-pin, female

REMOTE 1-OUT(9P)

D-sub 9-pin, female

RS-232C

D-sub 9-pin, male

VIDEO CONTROL(15P)

D-sub 15-pin, male (for optional
BVR-50/50P)

VIDEO CONTROL(9P)

D-sub 9-pin, female (for optional
HKDV-900)

REMOTE 2 PARALLEL I/O(50P)

50-pin, female

Memory card insertion slot

PCMCIA (HDW-2000/M2000/M2000P/M2100/M2100P)

Memory stick slot

Memory stick (8 to 128 MB)

Accessories supplied

PSW 4 × 16 screws for rack mounting (4)

Installation Manual (1)

CD-ROM Manual (1)

Operation Guide (1)

Filter Clamp (Ferrite core)

HDW-2000/M2000/M2000P/S2000/S2000P (6)

HDW-M2100/M2100P (4)

Optional accessories

RCC-5G 9-pin remote control cable

BVR-50/50P Video Remote Control Unit

HKDV-900 Video Remote Control Unit

RMM-131 Rack Mount Adaptor

BCT-HD12CL Cleaning Cassette Tape

HKDW-101 Control Panel

HKDW-102 SDTI Interface Board

BKMW-102 Remote Control Unit

BKMW-103 Control Panel Extension Kit

AC power cord

- For customers in the U.S.A. and Canada
Part No. 1-557-377-11
Plug holder 3-613-640-01

- For customers in the United Kingdom
Part No. 1-782-165-11
Plug holder 3-613-640-01

- For customers in European countries other than the United Kingdom
Part No. 1-782-164-11
Plug holder 3-613-640-01

Design and specifications are subject to change without notice.

To prevent electromagnetic interference from portable communications devices

The use of portable telephones and other communications devices near this unit can result in misoperations and interference with audio and video signals.

It is recommended that portable communications devices near this unit be powered off.

Notes

(HDW-2000, HDW-M2000, HDW-M2000P, HDW-S2000, HDW-S2000P)

- Always make a test recording, and verify that it was recorded successfully.
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- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.

Note

(HDW-M2100, HDW-M2100P)

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出版日期：2012年3月

HDW-2000/M2000/M2000P/
S2000/S2000P
HDW-M2100/M2100P
(SY)
3-206-516-09(1)

Sony Corporation

<http://www.sony.net/>

Printed on recycled paper.

Printed in Japan
2012.03 32
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